

RISK MANAGEMENT...

managing risk with responsibility

Jeffrey S. Moquin, Director
Risk Management Department

Telephone: 754-321-3200
Facsimile: 754-321-3290

May 23, 2007

Signature on File

TO: Ms. Marisol Smith, Principal
West Hollywood Elementary School

FROM: Edward See, Project Manager
Risk Management Department

SUBJECT: Indoor Air Quality (IAQ) Assessment
Portable 164N, 622P, 873C, 1105PK and 1117PK

<u>For Custodial Supervisor Use Only</u>	
<input type="checkbox"/>	Custodial Issues Addressed
<input type="checkbox"/>	Custodial Issues Not Addressed

On April 27, 2007 I conducted an assessment of Portable 164N, 622P, 873C, 1105PK and 1117PK at **West Hollywood Elementary School**. This evaluation included observations of the flooring system, ceiling tiles, false ceiling plenum, environmental surfaces, interior and exterior walls, and the accessible ventilation equipment. Additionally, environmental parameter measurements were taken to include temperature, relative humidity, and carbon dioxide. The detailed findings, along with the recommended corrective action can be found on the attached IAQ Assessment Worksheets.

The IAQ assessment did identify one or more existing conditions impacting IAQ and has generated appropriate work orders to correct deficiencies in systems and maintenance that could contribute to decreased indoor air quality. At the time of the assessment, these concerns were not an immediate health or safety concern to building occupants. However, due to individual sensitivities and predisposing health factors, it is possible that some building occupants may elicit a health response to agents and / or conditions identified during the evaluation. Therefore, to further improve IAQ, prevent development of future IAQ-related problems, and to reduce the potential for IAQ-related complaints by building occupants, the IAQ Assessment Team recommends appropriate follow up of each item identified and listed in the attached evaluation.

Please ensure that your Head Facilities Serviceperson receives a copy of this correspondence so that the recommendations requiring their attention can be addressed. Within two weeks a representative from the Custodial/Grounds Department will conduct a follow-up visit to ensure that all issues have been appropriately addressed.

Should any questions arise, or if the current concerns continue after the attached recommendations have been addressed, please feel free to contact me at 754-321-3200.

cc: Steven Friedman, Area Superintendent (Task Assigned)
Margaret Underhill, Area Director
Jeffrey S. Moquin, Director, Risk Management
Rodney Williams, Project Manager, Facilities and Construction Management
Diane Watts, Broward Teachers Union
Roy Jarrett, National Federation of Public and Private Employees
Mark Dorsett, Manager 1, Physical Plant Operations Division, Zone 1
Roy Norton, Manager Custodial/Grounds, Physical Plant Operations Division
Robert Krickovich, Coordinator, LEA, Facilities and Construction Management

ES/tc
Enc.

IAQ Assessment

Location Number 0161
 Evaluation Requested April 9, 2007
 Evaluation Date April 27, 2007

West Hollywood Elementary School

Time of Day 8:45 am

Outdoor Conditions Temperature 81.6 Relative Humidity 68.4 Ambient CO2 519

Fish	Temperature	Range	Relative Humidity	Range	CO2	Range	# Occupants
P-164N	69.8	72 - 78	45.7	30% - 60%	2305	Max 700 > Ambient	21
Noticeable Odor		Visible water damage / staining?		Visible microbial growth?		Amount of material affected	
Yes							
Ceiling Type	Wood Paneling	Yes	No	1 Panel			
Wall Type	Tackable	Yes	No	North Wall			
Flooring	Vinyl	No	No	None			

	Clean	Minor Dust / Debris	Needs Cleaning	Corrective Action Required
Ceiling	No	Yes	Yes	Repair/replace ceiling material
Walls	Yes	No	No	
Flooring	No	Yes	Yes	Clean and sanitize
HVAC Supply Grills	No	Yes	Yes	Clean with Wexcide disinfectant
HVAC Return Grills	No	Yes	Yes	Clean with Wexcide disinfectant
Ceiling at Supply Grills	No	Yes	Yes	Clean as appropriate
Surfaces in Room	No	Yes	Yes	Clean as appropriate

Observations

Findings:

- Visible staining on 1 ceiling panel
- Dust and debris on HVAC supply and return grills and on ceiling above South A/C wall unit
- Dust and debris on floor
- Dust and debris on environmental surfaces. Excess clutter in the room.
- Temperature was low and CO2 level was elevated at the time of the assessment
- Small gap at East door between door and frame
- One damaged floor tile at West door
- Visible staining on North wall under dry erase board and on board. Moisture content is not elevated.
- Elevated moisture content in South wall (18% WME) under A/C unit. Wall reveals signs of previous water damage. Possible drain pan leak.
- 1 bamboo plant - no soil
- Teacher complained of odor from oil based paint

-Recommendations:

Site Based Maintenance:

- Clean HVAC supply and return grills with Wexcide disinfectant solution and clean ceiling above South A/C wall unit as appropriate
- Clean and sanitize floor
- Encourage occupant to reduce clutter to assist in cleaning efforts. Thoroughly clean all environmental surfaces.
- Continue to monitor this location for any signs of microbial growth as well as dust and debris accumulation and clean as appropriate

Physical Plant Operations:

- Evaluate cause of stained ceiling panel and repair as appropriate. Repair/replace ceiling material as appropriate.
- Evaluate gap at East door between door and frame and repair as appropriate to prevent water intrusion and introduction of outside air
- Remove and replace damaged floor tile at West door
- Evaluate cause of elevated moisture content in South wall under A/C unit and staining on North wall under dry erase board and repair as appropriate. Repair/replace wall material as appropriate.
- Evaluate A/C units for proper operation and repair as appropriate to increase temperature and lower CO2 level
- Ensure that only water based paints are being used

IAQ Assessment

West Hollywood Elementary School

Location Number 0161
 Evaluation Requested April 9, 2007
 Evaluation Date April 27, 2007

Time of Day 8:45 am

Outdoor Conditions Temperature 81.6 Relative Humidity 68.4 Ambient CO2 519

Fish	Temperature	Range	Relative Humidity	Range	CO2	Range	# Occupants
P-622P	74.5	72 - 78	54	30% - 60%	1059	Max 700 > Ambient	1
Noticeable Odor		Visible water damage / staining?		Visible microbial growth?		Amount of material affected	
No		Yes		No		2 Light Grids	
Ceiling Type	2 x 4 Lay In		Yes	No		2 Light Grids	
Wall Type	Tackable		No	No		None	
Flooring	Vinyl		No	No		None	

	Clean	Minor Dust / Debris	Needs Cleaning	Corrective Action Required
Ceiling	Yes	No	No	
Walls	Yes	No	No	
Flooring	Yes	No	No	
HVAC Supply Grills	No	Yes	Yes	Clean with Wexcide disinfectant
HVAC Return Grills	No	Yes	Yes	Clean with Wexcide disinfectant
Ceiling at Supply Grills				N/A
Surfaces in Room	No	Yes	Yes	Clean as appropriate

Observations

Findings:

- 2 rusted light grids on East and West sides
- Dust and debris on HVAC supply and return grills
- Dust and debris on multicolor throw rug
- Dust and debris on environmental surfaces
- Dust and debris on restroom exhaust fan
- Exterior - Fascia is rotted on South side of unit - @ 4 square feet

-Recommendations:

Site Based Maintenance:

- Clean HVAC supply and return grills with Wexcide disinfectant solution
- Thoroughly clean throw rug or discard
- Thoroughly clean all environmental surfaces
- Clean restroom exhaust fan with Wexcide disinfectant solution
- Continue to monitor this location for any signs of microbial growth as well as dust and debris accumulation and clean as appropriate

Physical Plant Operations:

- Evaluate cause of rusted light grids on East and West sides and repair as appropriate. Replace light grids.
- Evaluate cause of rotted fascia and repair as appropriate and replace fascia as appropriate

IAQ Assessment

West Hollywood Elementary School

Location Number 0161
 Evaluation Requested April 9, 2007
 Evaluation Date April 27, 2007

Time of Day 8:45 am

Outdoor Conditions Temperature 81.6 Relative Humidity 68.4 Ambient CO2 519

Fish	Temperature	Range	Relative Humidity	Range	CO2	Range	# Occupants
P-873C	72.3	72 - 78	58.7	30% - 60%	1494	Max 700 > Ambient	20
Noticeable Odor	No		Visible water damage / staining?		Visible microbial growth?		Amount of material affected
Ceiling Type	2 x 4 Lay In		Yes		No		2 Light Grids
Wall Type	Tackable		No		No		None
Flooring	Vinyl		No		No		None

	Clean	Minor Dust / Debris	Needs Cleaning	Corrective Action Required
Ceiling	Yes	No	No	
Walls	Yes	No	No	
Flooring	Yes	No	No	
HVAC Supply Grills	Yes	No	No	
HVAC Return Grills	Yes	No	No	
Ceiling at Supply Grills	Yes	No	No	
Surfaces in Room	Yes	No	No	

Observations

Findings:

- 2 rusted light grids above South A/C wall unit
- Only one A/C unit was on at the time of the assessment impacting CO2 level. Second unit was turned on during assessment.
- Small gap at East door between door and frame
- Elevated moisture content in East wall (23% WME) under dry erase board. Wall reveals signs of previous repair.
- 3 live plants in the room with visible microbial growth on the soil
- No issues on exterior of portable

-Recommendations:

Site Based Maintenance:

- Ensure that both A/C units remain on
- Remove plants from the room
- Continue to monitor this location for any signs of microbial growth as well as dust and debris accumulation and clean as appropriate

Physical Plant Operations:

- Evaluate cause of rusted light grids above South A/C wall unit and repair as appropriate. Replace light grids.
- Evaluate gap at East door between door and frame and repair as appropriate to prevent water intrusion and introduction of outside air
- Evaluate cause of elevated moisture content in East wall under dry erase board and repair as appropriate. Repair/replace wall material as appropriate.

Note: Plants are often pleasant additions to trouble free indoor environments. However, they can be sources for contamination by molds. Often they can be a source of water, which leads to the amplification of mold in the building. Their presence in a building or an area that is experiencing air quality concerns can be confusing and confounding. The simple and most direct solution is to remove the plants.

IAQ Assessment

West Hollywood Elementary School

Location Number 0161
 Evaluation Requested April 9, 2007
 Evaluation Date April 27, 2007

Time of Day 8:45 am

Outdoor Conditions Temperature 81.6 Relative Humidity 68.4 Ambient CO2 519

Fish	Temperature	Range	Relative Humidity	Range	CO2	Range	# Occupants
P-1105PK	70.2	72 - 78	50.8	30% - 60%	1374	Max 700 > Ambient	2
Noticeable Odor	Yes		Visible water damage / staining?		Visible microbial growth?		Amount of material affected
Ceiling Type	4 x 10 Panels		Yes		Yes		6 A/C Supply Grills
Wall Type	Wood		No		No		None
Flooring	Vinyl		No		No		None

	Clean	Minor Dust / Debris	Needs Cleaning	Corrective Action Required
Ceiling	Yes	No	No	
Walls	Yes	No	No	
Flooring	No	Yes	Yes	Clean and sanitize
HVAC Supply Grills	No	Yes	Yes	Clean with Wexcide disinfectant
HVAC Return Grills	No	Yes	Yes	Clean with Wexcide disinfectant
Ceiling at Supply Grills	Yes	No	No	
Surfaces in Room	No	Yes	Yes	Clean as appropriate

Observations

Findings:

- Visible rust on all A/C supply grills (6) and minor microbial growth
- Dust and debris on HVAC supply and return grills
- Dust and debris on floor and dust build up on throw rugs (4) in the room
- Dust and debris on environmental surfaces. Room has dolls, pillows and blankets for students.
- Dust and debris on A/C filter and incorrect size
- CO2 level was slightly elevated at the time of the assessment
- Bathroom has no exhaust fan

-Recommendations:

Site Based Maintenance:

- Clean HVAC supply and return grills with Wexcide disinfectant solution
- Clean and sanitize floor and thoroughly clean throw rugs or discard
- Thoroughly clean all environmental surfaces and advise occupant to regularly clean dolls, pillows and blankets
- Remove and replace A/C filter and ensure proper size is being used
- Continue to monitor this location for any signs of microbial growth as well as dust and debris accumulation and clean as appropriate

Physical Plant Operations:

- Evaluate cause of rust and microbial growth on A/C supply grills and repair as appropriate. Remove and replace all air supply grills (6).
- Evaluate HVAC for proper operation and repair as appropriate to lower CO2 level
- Evaluate need for exhaust fan in restroom

IAQ Assessment

West Hollywood Elementary School

Location Number 0161
 Evaluation Requested April 9, 2007
 Evaluation Date April 27, 2007

Time of Day 8:45 am

Outdoor Conditions Temperature 81.6 Relative Humidity 68.4 Ambient CO2 519

Fish	Temperature	Range	Relative Humidity	Range	CO2	Range	# Occupants
P-1117PK	73.8	72 - 78	47.1	30% - 60%	1560	Max 700 > Ambient	21
Noticeable Odor		Visible water damage / staining?		Visible microbial growth?		Amount of material affected	
No		Yes		Yes		4 Panels	
Ceiling Type	3 x 10 Panels		Yes	Yes	4 Panels		
Wall Type	Wood		No	No	None		
Flooring	Vinyl		No	No	None		

	Clean	Minor Dust / Debris	Needs Cleaning	Corrective Action Required
Ceiling	No	Yes	Yes	Repair/replace ceiling material
Walls	Yes	No	No	
Flooring	Yes	No	No	
HVAC Supply Grills	No	Yes	Yes	Clean with Wexcide disinfectant
HVAC Return Grills	No	Yes	Yes	Clean with Wexcide disinfectant
Ceiling at Supply Grills	Yes	No	No	
Surfaces in Room	Yes	No	No	

Observations

Findings:

- Visible staining on ceiling material in bathroom
- Visible staining and microbial growth on ceiling material on North side of room. Moisture content is not elevated.
- Dust and debris and minor microbial growth on HVAC supply and return grills
- Dust and debris on throw rug
- Dust and debris on A/C filter and incorrect size
- CO2 level was slightly elevated at the time of the assessment

-Recommendations:

Site Based Maintenance:

- Clean HVAC supply and return grills with Wexcide disinfectant solution
- Thoroughly clean throw rug or discard
- Thoroughly clean all environmental surfaces
- Remove and replace A/C filter and ensure proper size is being used
- Continue to monitor this location for any signs of microbial growth as well as dust and debris accumulation and clean as appropriate

Physical Plant Operations:

- Evaluate cause stained ceiling in bathroom and stained ceiling with visible microbial growth on North side of room and repair as appropriate. Repair/replace ceiling material as appropriate.
- Evaluate HVAC for proper operation and repair as appropriate to lower CO2 level